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# California Department of Health Services



## Medi-Cal Managed Care Plans

# Asthma Management / Pharmaceutical Utilization 2002 Report

**March 2003**

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State of California**

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# ASTHMA MANAGEMENT/PHARMACEUTICAL UTILIZATION 2002 REPORT

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## Executive Summary

Asthma is one of the most common chronic health conditions, resulting in significant disability, lost school days, and medical costs. It is estimated that at least 265,000 Medi-Cal managed care plan members have asthma. National guidelines on asthma treatment recommend the use of long-acting medications to control asthma and reduce its adverse outcomes. However, studies have shown that many asthma patients do not receive appropriate control medications, and instead rely excessively on short-acting medicines for symptom relief.

Beginning in 2001, all Medi-Cal managed care plans were required to report the rates for the National Committee for Quality Assurance (NCQA) Health Employer Data and Information Set (HEDIS®) asthma performance measure entitled *Use of Appropriate Medications for People With Asthma*. Initial results suggested that only about 55 percent of Medi-Cal managed care patients with persistent asthma were receiving appropriate medications.

In consultation with asthma experts and plan staff, DHS subsequently determined that a supplemental asthma measure might enhance the ability of plans to identify patients in need of more intensive case management and might help providers to improve prescribing practices. A measure of the overutilization of short-acting beta-agonist control medications was developed and pilot tested. The measure used administrative data only to determine the proportion of managed care plan members with persistent asthma who filled prescriptions for eight or more canisters of short-acting beta-agonists during the measurement year.

Results of the pilot indicate that, overall, 16.6 percent of Medi-Cal managed care enrollees with persistent asthma received an inappropriately high number of prescriptions for short-acting medications, suggesting that their asthma is poorly controlled. There was significant variation among plans.

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## Background

Asthma is one of the most common chronic health conditions; it has a significant impact on quality of life, and is a leading cause of lost school and workdays. Asthma is the most frequent reason for hospitalizations of children, and asthma hospitalizations are substantially higher among Medicaid children than among non-Medicaid children. Asthma is more prevalent among African-American and Latino children and among those living in poverty; these children have more severe, life-threatening cases and substantially higher rates of multiple asthma hospitalizations.<sup>1,2,3</sup>

The national prevalence of asthma has increased by 75 percent since 1980.<sup>4,5</sup> In California, the self-reported asthma rate in all ages is 8.8 percent.<sup>6</sup> It is estimated that at least 265,000 people enrolled in Medi-Cal managed care plans are asthmatics.

The economic costs of asthma are high, and increase markedly with increased severity of disease.<sup>7</sup> Improving the control of asthma through the use of appropriate medications has been shown to decrease emergency department use and hospitalizations, and could decrease disability days and costs.<sup>8,9,10</sup>

In 1997, the National Heart, Lung, and Blood Institute issued Guidelines for the Diagnosis and Treatment of Asthma, emphasizing the importance of regular use of anti-inflammatory medicines to improve asthma control and lung function.<sup>11</sup>

Use of these medicines has been shown to significantly reduce the risk of hospitalization or emergency department visits in children<sup>12,13</sup> and adults.<sup>14</sup>

NCQA subsequently developed the *Use of Appropriate Medications for People with Asthma* HEDIS performance measure. DHS required all Medi-Cal managed care plans to report the asthma measure beginning in 2001. The HEDIS measure assesses the proportion of Medi-Cal managed care plan members who have been diagnosed with “persistent” asthma who have received one dispensed prescription for a medication for long-term control. In 2001, Medi-Cal Managed Care Division (MMCD) required Medi-Cal managed care plans to implement this measure to assess the performance of plans with respect to asthma care.

Initial results showed that only 55 percent of managed care plan members with persistent asthma had received appropriate medications.

MMCD convened an ad-hoc workgroup on asthma—including managed care plan physicians, pharmacists, quality improvement staff, and asthma experts—to discuss approaches to improving asthma care. At that time, 15 of the 29 Medi-Cal managed care plans had asthma disease management programs or asthma quality improvement projects in place, 8 of which used pharmacy utilization data along with other factors to evaluate asthma care and prescribing practices.

One important indicator of inappropriate use of asthma medications is overuse of short-acting beta-agonists. Several studies indicate that beta-agonist overuse correlates with poor control of asthma and its consequences.<sup>15,16</sup> Numerous studies suggest that the regular use of short-acting beta-agonists can lead to decreased lung function, increased airway responsiveness, and worse asthma control.<sup>17</sup>

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Children receiving six or more bronchodilators per year were five times more likely to be admitted to the hospital and three times more likely to visit the emergency department, compared with those receiving one to three prescriptions.<sup>18</sup>

Several health plans have previously utilized measures of beta-agonist use in their asthma care quality improvement efforts, including Kaiser Permanente, Inland Empire, and Solano Partnership for Health.<sup>19</sup> These plans had used measures of beta-agonist overuse to identify physicians for targeted interventions to improve prescribing practices, and patients in need of more intensive case management, with resultant decreases in emergency department use and hospitalization.

The workgroup noted that the HEDIS asthma measure does not easily permit identification of people with poorly controlled asthma who could benefit from more intensive case management and is difficult to use to identify providers who need help to improve their prescribing practices.

The workgroup thus decided to develop and pilot a performance measure assessing the overutilization of beta-agonists, to complement the HEDIS asthma measure.



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## Methods

The measure was designed to use only administrative data and to use the same denominator specifications as the asthma HEDIS measure, to make implementation more feasible. The HEDIS denominator specifications require age of 5 to 56 years as of December 31 of the measurement year, continuous enrollment in the plan for two years with an allowable gap of not more than 45 days in each year, enrollment as of December 31 of the measurement year, a medical pharmacy benefit as of the measurement year, and a diagnosis of persistent asthma as defined administratively by the following:

- ◆ at least four asthma medication dispensing events (i.e., an asthma medication was dispensed on four occasions), **OR**
- ◆ at least one emergency department (ED) visit based on the visit codes below with asthma (ICD-9 code 493) as the principal diagnosis, **OR**
- ◆ at least one acute inpatient discharge based on the visit codes below with asthma (ICD-9 code 493) as the principal diagnosis, **OR**
- ◆ at least four outpatient asthma visits based on the visit codes below with asthma (ICD-9 code 493) as one of the listed diagnoses **AND** at least two asthma medication dispensing events.

The measure determines the percentage of the sample who receive prescriptions for eight or more canisters of short-acting beta-agonist inhalers during the measurement year. Eight was chosen as the cut-off point after a review of the literature and discussion with the health plans that had implemented beta-agonist type measures. The measure's specifications are included in Appendix A.

Health Services Advisory Group, Inc. (HSAG), DHS' contracted External Quality Review Organization (EQRO), assessed the collection and validity of submitted data during the 2002 HEDIS compliance audit, using the NCQA HEDIS<sup>®</sup> Compliance Audit<sup>™</sup> and medical record validation methodology.

Because this is a pilot measure, the workgroup and MMCD agreed to release only aggregate results, though each plan would be able to access its own individual and benchmark data.

NCQA HEDIS<sup>®</sup> Compliance Audit<sup>™</sup> is a trademark of National Committee for Quality Assurance (NCQA).



## Results

The study sample included 36,000 persistent asthmatics enrolled in Medi-Cal managed care plans. Of these, 16.6 percent (6,000) were prescribed eight or more canisters of short-acting beta-agonist inhalers during the measurement year. As Table 1 shows, the rates for overutilization of beta-agonists varied by age.

**Table 1—Persistent Asthmatics with  $\geq 8$  Dispensed Canisters Short-acting Beta-Agonists**

Ages 5-9	Ages 10-17	Ages 18-56	Total
5.0%	15.0%	25.0%	16.6%

There was substantial variation among plans, with overuse of beta-agonists ranging from 12 percent to 32 percent for all ages combined. Table 2 shows the percentile distribution of Medi-Cal results. Table 3 indicates the number of plans with rates above the 90<sup>th</sup> percentile, between the 50<sup>th</sup> and 90<sup>th</sup> percentiles, between the 50<sup>th</sup> and 25<sup>th</sup> percentiles, or below the 25<sup>th</sup> percentiles.

**Table 2—Distribution of Results, Percentiles**

	Age 5 to 9 (mean=5.0%)	Age 10 to 17 (mean=15.0%)	Age 18 to 56 (mean=25.0%)	All Ages Combined (mean=16.6%)
<b>Best Rate</b>	1.0%	6.1%	18.3%	12.0%
<b>90<sup>th</sup> Percentile</b>	2.2%	10.3%	19.8%	12.8%
<b>50<sup>th</sup> Percentile</b>	5.4%	16.8%	26.1%	19.2%
<b>25<sup>th</sup> Percentile</b>	8.8%	25.2%	34.4%	25.3%
<b>Worst Rate</b>	21.9%	38.2%	49.3%	31.9%

**Table 3—Distribution of Results, Plan Count**

	Ages 5-9	Ages 10-17	Ages 18-56	All Ages Combined
<b>Plans <math>\geq</math> 90<sup>th</sup> Percentile</b>	3	3	3	3
<b>50<sup>th</sup> <math>\leq</math> Plans &lt; 90<sup>th</sup></b>	12	12	12	12
<b>25<sup>th</sup> <math>\leq</math> Plans &lt; 50<sup>th</sup></b>	7	7	7	8
<b>Plans &lt; 25<sup>th</sup> Percentile</b>	7	7	7	6

Table 4 shows the comparative asthma treatment performance of plans using the HEDIS asthma measure and the pilot overuse of beta-agonist measure. Notably, there is minimal concordance between the measures.

**Table 1—Beta-Agonist and HEDIS Rates**

Medi-Cal Managed Care Plan	Ages 5 to 9		Ages 10 to 17		Ages 18 to 56		All Ages Combined	
	Beta-Agonist	HEDIS	Beta-Agonist	HEDIS	Beta-Agonist	HEDIS	Beta-Agonist	HEDIS
Health Plan A	6.7%	55.6%	16.2%	63.3%	28.7%	61.9%	18.2%	60.7%
Health Plan B	5.0%	62.0%	11.9%	65.4%	25.0%	69.9%	15.8%	66.5%
Health Plan C	3.4%	44.9%	11.0%	50.9%	22.9%	65.5%	16.2%	57.8%
Health Plan D	11.5%	NA	11.5%	48.1%	18.3%	64.8%	14.8%	56.4%
Health Plan E	3.8%	48.1%	12.7%	55.6%	24.9%	68.6%	18.0%	61.6%
Health Plan F	2.0%	56.8%	9.2%	62.6%	23.2%	67.6%	12.7%	62.9%
Health Plan G	4.6%	49.2%	13.9%	63.7%	29.0%	66.9%	20.0%	62.2%
Health Plan H	5.9%	42.8%	21.1%	58.3%	26.1%	57.3%	20.5%	54.5%
Health Plan I	16.4%	57.5%	30.6%	52.8%	49.3%	65.2%	31.8%	58.4%
Health Plan J	21.9%	80.8%	32.7%	95.1%	36.5%	82.1%	31.9%	85.3%
Health Plan K	5.2%	38.6%	17.1%	43.1%	25.6%	46.5%	17.1%	43.2%
Health Plan L	2.2%	NA	15.3%	42.4%	21.9%	53.1%	17.2%	55.4%
Health Plan M	14.3%	41.3%	6.1%	47.2%	34.4%	62.4%	19.0%	50.6%
Health Plan N	5.9%	47.3%	16.8%	52.3%	30.8%	58.4%	20.3%	53.8%
Health Plan O	3.4%	59.8%	25.6%	61.5%	32.3%	74.0%	25.3%	68.9%
Health Plan P	4.5%	55.6%	11.1%	59.2%	19.4%	61.9%	12.8%	59.4%
Health Plan Q	1.0%	51.0%	10.3%	55.2%	22.4%	63.9%	14.5%	58.7%
Health Plan R	5.4%	40.5%	27.8%	38.0%	40.2%	49.6%	30.5%	44.2%
Health Plan S	4.1%	39.2%	14.9%	49.7%	21.3%	53.9%	15.0%	48.9%
Health Plan T	3.4%	34.3%	12.6%	43.7%	19.8%	47.4%	12.0%	41.8%
Health Plan U	8.1%	44.8%	27.5%	50.6%	40.1%	61.2%	27.0%	52.9%
Health Plan V	5.2%	62.6%	12.3%	65.9%	23.7%	68.3%	18.2%	66.9%
Health Plan W	8.8%	47.2%	25.2%	50.4%	38.8%	68.8%	26.4%	57.8%
Health Plan X	7.0%	60.0%	27.4%	58.9%	24.4%	67.0%	22.3%	64.3%
Health Plan Y	3.5%	46.5%	22.7%	62.9%	24.2%	72.2%	19.2%	64.0%
Health Plan Z	9.8%	53.7%	24.6%	60.2%	29.4%	55.6%	22.2%	56.8%
Health Plan AA	5.9%	52.9%	22.8%	68.4%	40.0%	75.7%	24.7%	66.9%
Health Plan BB	13.9%	47.2%	38.2%	58.2%	35.7%	74.3%	31.7%	62.7%
Health Plan CC	10.5%	31.6%	18.3%	46.7%	31.4%	62.9%	25.3%	54.5%
2002 Average	5.0%	45.8%	15.0%	54.2%	25.0%	60.2%	16.6%	54.6%
HPL	2.2%	NA	10.3%	NA	19.8%	NA	12.8%	NA
MPL	8.8%	NA	25.2%	NA	34.4%	NA	25.3%	NA

NA = Not Applicable

HPL = High Performance Level

MPL = Minimum Performance Level





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## Discussion

The results suggest that a significant number of Medi-Cal managed care members have poorly controlled asthma and are receiving sub-optimal medication management. These results are consistent with those of other studies demonstrating poor asthma management practices.<sup>20</sup>

In one study, less than one-third of children with moderate to severe asthma had taken long-term maintenance medication in the prior month; Medicaid coverage was a risk factor for poor asthma management.<sup>21</sup> Another study of adult Medicaid asthma patients found that a large percentage were not receiving medications in compliance with guidelines and that those on high doses of short-acting beta-agonists were most likely to be hospitalized.<sup>22</sup>

Results of a study conducted in 1999 also showed that patients who overused beta-agonist inhalers were more likely to use each of several other classes of medication.<sup>23</sup>

Tracking overutilization of short-acting beta-agonist use in asthmatic patients can play an important role in improving the quality of care for asthma in managed care plans. Individual patients can be targeted for improved case management, and providers can be targeted for help with improving prescribing practices. Application of the measure at a plan level can encourage plans to implement quality improvement programs and can serve as an indicator of system performance in provision of asthma care.

However, the measure has certain limitations. Because it uses the HEDIS asthma measure denominator specifications, the measure captures only a portion of plan asthmatics, and thus is likely to underestimate the number of members affected by inadequate asthma control. However, expansion of the denominator population (e.g., to include ages 0 to 4, those with shorter continuous enrollment, or all members with a diagnosis of asthma) might make administration of the measure more difficult. Plans would have to program for the new denominator and increase chart retrieval and review beyond what is already done for the HEDIS asthma measure.

Most importantly, the measure has not been tested for reliability and validity, and has not been standardized for use across systems of care. Thus, while the measure can be used to compare plan performance among Medi-Cal managed care plans, it cannot assess system-wide performance as compared to other Medicaid programs, commercial plans, or prior studies. The higher rates of overutilization of beta-agonists reported in some earlier studies may reflect the use of a different threshold for definition of overutilization. Some studies, for example, recommend that use of only two canisters in any measurement year constitutes overuse and the need for controller medications.<sup>24</sup> The latest National Asthma Education and Prevention Program (NAEPP) guidelines consider increasing use of short-acting beta-agonists or the use of more than one canister in one month as indicative of inadequate asthma control and the need to increase the intensity of medical therapy.<sup>25</sup> The use of the higher threshold in the DHS study may also contribute to underestimation of poorly controlled asthma in the study population.

The lack of concordance of plan performance based on this measure versus the HEDIS asthma measure requires further exploration. The two measures assess different things: receipt of controller medications versus adequacy of control as measured by use of short-acting beta-agonists. However, one might expect that plan performance on the two measures would be correlated, as use of appropriate controller medications should lead to improved symptom

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control and reduced need for beta-agonist refills. Analysis of the overlap between patients receiving controller medications and those with high beta-agonist use was beyond the scope of this study.

Some plans (notably, Kaiser Permanente and Partnership Health Plan) use an asthma measure that assesses the ratio of short-acting to controller medications in asthma patients. The plans believe that the ratio measure provides a truer picture of the adequacy of asthma medication management. The workgroup considered developing a ratio measure, but concluded that developing and implementing such a measure was not feasible given current resources.

However, the HEDIS measure alone does not assess many aspects of quality of asthma care, such as whether an appropriate severity assessment has defined the need for or appropriate level of controller use.<sup>26</sup> The use of the simple pilot measure provides another view of plan performance in the treatment of asthma, which provides important information in addition to that provided by the HEDIS measure.

The members identified as receiving excessive prescriptions for short-acting beta-agonists represent asthmatics in whom symptoms appear to be poorly controlled, and who require more intensive case management to improve their utilization of controller medications. The information derived from the overuse of short-acting medications measure can be shared with providers to improve prescribing practices. Both the members at-risk and the providers, with some limitations, can be specifically identified using this measure, should plans decide to develop and implement follow-up interventions targeted at specific members and/or providers.



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## Recommendations

- ◆ DHS should continue to monitor the performance of Medi-Cal managed care plans in 2003 using the pilot *Utilization of Short-Acting Beta-Agonists* measure. The results of the second year of the study will be released on a plan-specific basis. Use of the beta-agonist overuse measure as a complement to the HEDIS<sup>®</sup> asthma measure allows DHS and plans to monitor both overuse of inappropriate medications and underuse of appropriate medications for the treatment of asthma.
- ◆ DHS should initiate collaborative quality improvement projects to improve the quality of care for asthma for Medi-Cal managed care enrollees. Monitoring of medication use is just one tool in the quality improvement arsenal. Collaborative quality improvement efforts should also consider tools such as development of asthma registries, feedback to individual providers on prescription practices, and identification of and intensive case management for all patients with indications of poor asthma control.
- ◆ DHS should work collaboratively with plans and asthma measurement experts to assess revisions of the beta-agonist over-use measure, including expansion of the denominator to include all asthmatics, reduction in required continuous enrollment to one year, and reduction in the number of canisters defined as overuse. At the same time, DHS should encourage NCQA to develop standardized asthma care performance measures that incorporate assessment of over-utilization of short-acting beta-agonists.

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## Appendix A

# DHS Beta-Agonist Measure Methodology



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## DHS Beta-Agonist Measure Methodology

### Description

This measure evaluates the percentage of Medi-Cal managed care enrollees receiving eight or more short-acting beta-agonist inhalers in the measurement year. Age ranges included in the measure are the same as the HEDIS<sup>®</sup> measure (5 to 9, 10 to 17, and 18 to 56 years of age). The enrollees must have been continuously enrolled for the measurement year and the year prior with one allowable gap during each year of the continuous enrollment timeframe (as defined below).

### Denominator

DHS will use the same denominator population as defined in the HEDIS measure “Use of Appropriate Medications for People with Asthma.”

### Numerator

For each enrollee in the denominator, the number of enrollees who filled prescriptions for eight or more canisters of inhaled short-acting beta-agonist during the measurement year. Note that more than one canister may be dispensed on a given date.

### Data Collection

Pharmacy claims data collected by each Medi-Cal managed care plan. Data may be collected by the administrative method only; medical record review is not an option for this measure.

### Measurement Year

January 1, 2001 through December 31, 2001.

### Continuous Enrollment

The measurement year and the year prior (January 1, 2000 to December 31, 2001). DHS elected to utilize the eligible population for the Use of Appropriate Medications for People with Asthma HEDIS measure to allow Medi-Cal managed care plans to use the same denominator population for measurement purposes.

### Gap in Enrollment/Anchor Date

No more than one gap in enrollment of up to 45 days during each year of continuous enrollment. To determine continuous enrollment for a Medi-Cal managed care beneficiary whose enrollment is verified monthly, the member may not have more than a one-month gap in coverage during each measurement year. The member must be enrolled on December 31 of the measurement year.

### Event or Diagnosis

Persistent asthma as defined by the coding scheme in the HEDIS asthma measure.





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## Ages

Age bands match the HEDIS asthma measure: 5 to 9, 10 to 17, and 18 to 56 years of age.

## Medications

Medi-Cal managed care plans will use only short-acting beta-agonist inhalers for this measure. Specifically excluded: long-acting beta-agonists, inhaled corticosteroids, inhaled anti-inflammatories, methylxanthines, nebulized medications, oral bronchodilators, leukotriene modifiers and mast cell stabilizers.

Medi-Cal managed care plans must use the National Drug Code (NDC) lists provided by DHS. Medi-Cal managed care plans may use internal medication codes from their formularies in place of NDC codes, if necessary. Medi-Cal managed care plans doing so must furnish this information to the HEDIS<sup>®</sup> auditor in order to “translate” the internal code to a medication from the enclosed NDC list.